OBLON, SPIVAK, et al.
DOCKET NO: 249731US2S DIV
INVENTOR: Hideo ANDO, et al.
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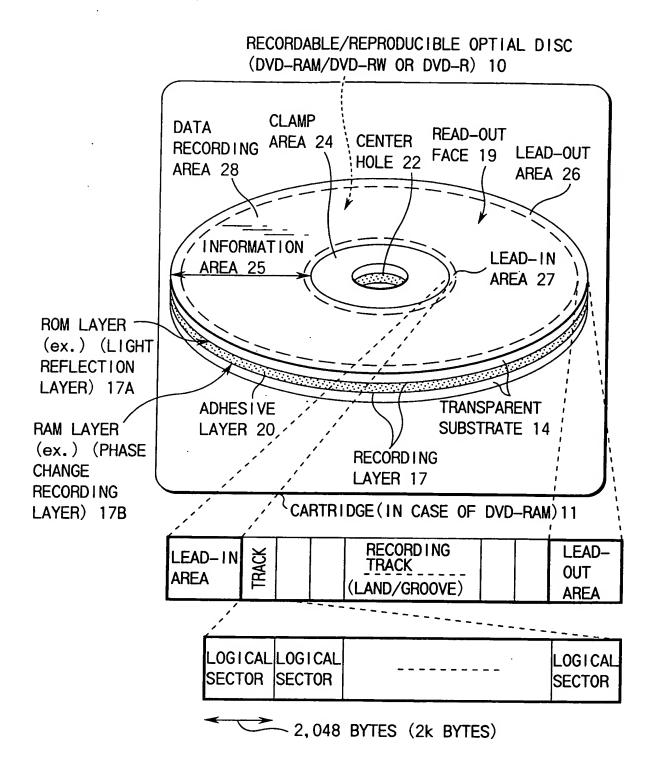


FIG. 1

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	ONE SECTOR (PHYSICAL SECTOR)								
PREVIOUS SECTOR	HEADER (EMBOSS)	SYNCHRO- NIZATION CODE	MODU- LATED SIGNAL		SYNCHRO- NIZATION CODE	MODU- LATED SIGNAL	HEADER OF NEXT SECTOR		

FIG. 2

	ONE ECC BLOCK 502 (CLUSTER OF 16 SECTORS = 32 kB)									
SECTOR 501s		SECTOR 501b	SECTOR 501c			SECTOR 501q				

FIG. 3

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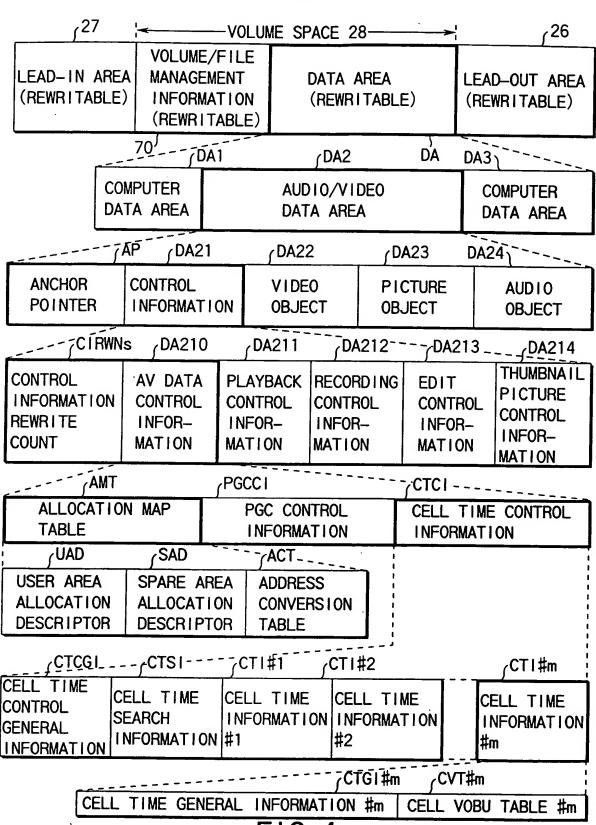


FIG. 4

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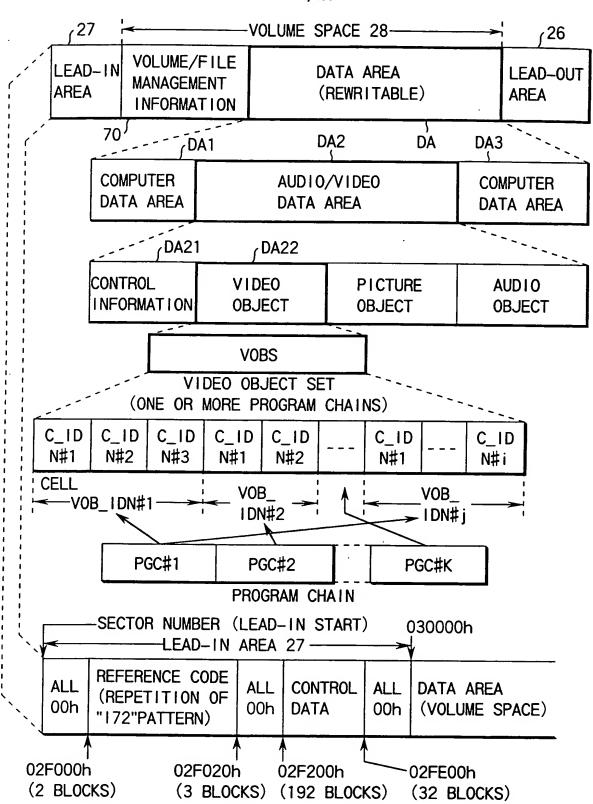


FIG.5

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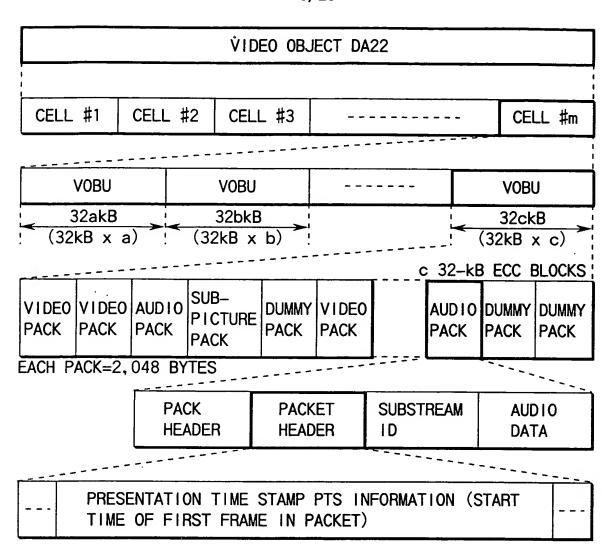


FIG. 6

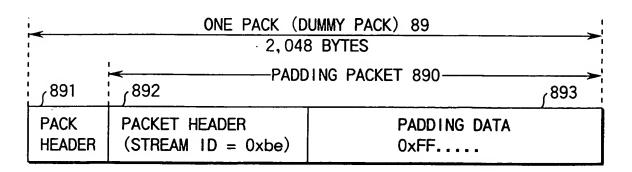


FIG. 7

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NUMBEF PICTUF IN VOE	RES	NUMBER PICTUR IN VOE	RES		PICT	BER (TURES (OBU)	3	PIC	BER OF TURES VOBU#1		PIC	BER OF TURES VOBU#n
				·								
CELL TI	IME OI JRA- DA ION SI	F ELL ATA ETS	LL SET PH TA DESC- SI			AL CO	NUMBER OF TIME CONSTI- CODE TUENT TABLE VOBUS		TIME CODE	NUMBE OF ACQUI RED DEFEC	- F	ACQUI - RED DEFECT ADDRESS
<pre><remarks> SET IS ALSO REFERRED TO AS EXTENT</remarks></pre>												
GENERA INFOR-	GENERAL CODE INFOR-					FECT: VIDEO AUDIO PIC IFOR- INFOR- INFOR- INFOR-				LL B- CTURE FOR- FION		
CELL T	IME IN	NFORMA	ATION	CTI	#m 			= =	=====			
CELL T	IME G	ENERAL	_ INF	ORMA	TION	#m	С	ELL	VOBU	TABLE	#m	
VOBU VOBU VOBU INFORMATION INFORMA#1 #2							_	ΓΙΟΝ				
												7 !
					JMMY NFORM			S	UDIO YNCHRO NFORMA		ΓION	

FIG.8

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CORRESPONDING	INFORMATION	INFORMATION	NUMBER OF
INFORMATION	NAME	CONTENTS	BYTES USED
VOBU GENERAL	I-PICTURE	DIFFERENTIAL ADDRESS VALUE OF	1
INFORMATION	END	I-PICTURE END POSITION FROM]
	POSITION	VOBU START POSITION	
DUMMY PACK	NUMBER OF	NUMBER OF DUMMY PACKS IN VOBU	1
INFORMATION	DUMMY PACKS		
	DUMMY PACKS	DUMMY PACK INSERTION	2 x DUMMY
	DISTRIBUTION		PACK
		OF VOBU, AND EACH NUMBER OF	NUMBER
		DUMMY PACKS (2 BYTES EACH)	
AUDIO	AUDIO STREAM	NUMBER OF CHANNELS OF AUDIO	1
	CHANNEL NUMBER	STREAM	
INFORMATION	I-PICTURE	DIFFERENTIAL ADDRESS VALUE OF	1
	AUD I O	SECTOR INCLUDING AUDIO PACK OF	
	POSITION #1	THE SAME TIME AS I-PICTURE	
	\	START TIME FROM START OF VOBU	
!		(MSB = "0" : LOCATED BEFORE	
		VOBU, MSB = "1" : LOCATED AFTER	
		(VOBU)	
	I-PICTURE	INDICATE SAMPLE NUMBER OF AUDIO	2
	START AUDIO	SAMPLE POSITION OF THE SAME	
	SAMPLE	TIME AS I-PICTURE START TIME IN	
	NUMBER #1	SECTOR AS COEFFICIENT OF SERIAL	
		NUMBERS OF ALL AUDIO PACKS	
	AUDIO	PRESENCE/ABSENCE OF	1
		SYNCHRONIZATION INFORMATION	
	INFORMATION	BETWEEN AUDIO AND VIDEO STREAMS	
	FLAG #1	(NEXT ITEM IS NOT AVAILABLE IF	İ
		ABSENT)	
		THE NUMBER OF AUDIO SAMPLES	2
		INCLUDED IN VOBU	
	DATA		-
	I-PICTURE AUDIO	POSITION #2 발유료	1
]		AUDIO SAMPLE NUMBER #2	2
Ì	AUDIO SYNCHRONIZ	ZATION FLAG #2	1
	AUDIO SYNCHRONIZ		2
	THE POST OF THE PO		
			

FIG.9

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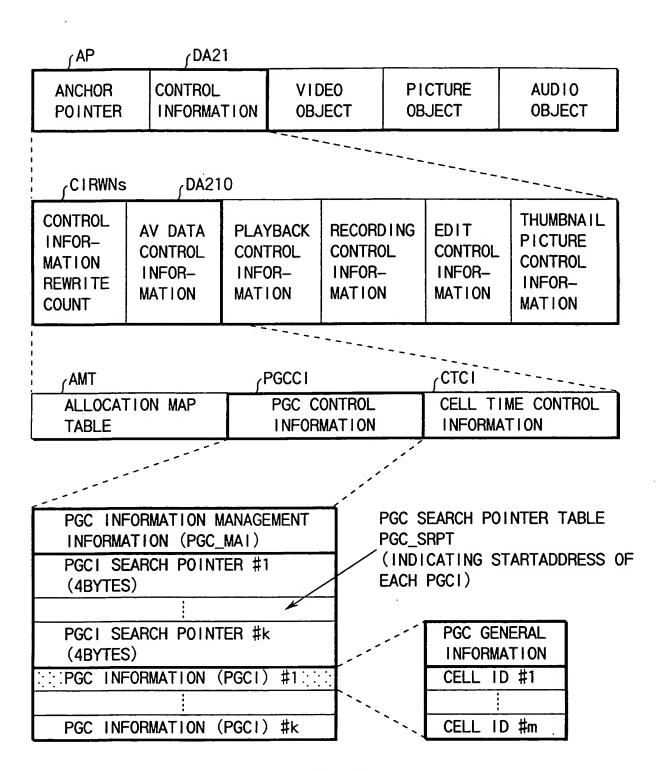


FIG. 10

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POSITIONS OF SHIFT PRODUCED BETWEEN ECC BLOCK BOUNDARY AND VOBU BOUNDARY

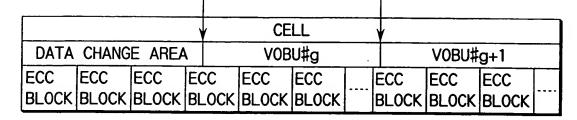


FIG. 11

SHIFT-REMOVED POSITIONS BETWEEN BOUNDARIES OF ECC AND VOBU

			,	CELI		 				
DATA	CHANGE	AREA		V0BU#g				VOBU#	g+1	
ECC BLOCK					ECC BLOCK				ECC BLOCK	

FIG. 12

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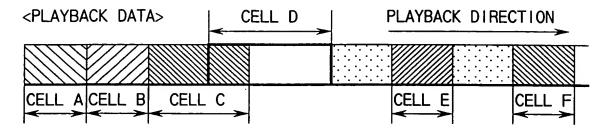


FIG. 13

PGC INFORMATION

PG	C#1	PGO	C#2	PG	C#3
NUMBER (OF CELLS	NUMBER (OF CELLS	NUMBER (OF CELLS
CELL#1	CELL A	CELL#1	CELL D	CELL#1	CELL E
CELL#2	CELL B	CELL#2	CELL E	CELL#2	CELL A
CELL#3	CELL C	CELL#3	CELL F	CELL#3	CELL D
				CELL#4	CELL B
				CELL#5	CELL E

FIG. 14

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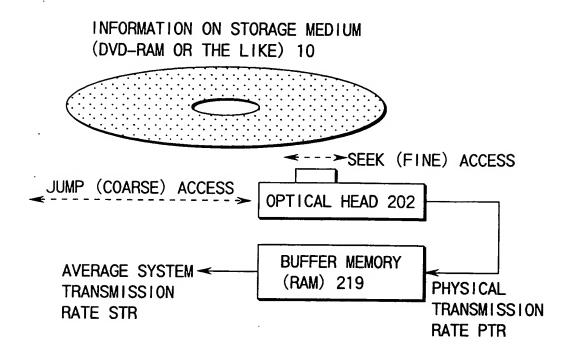
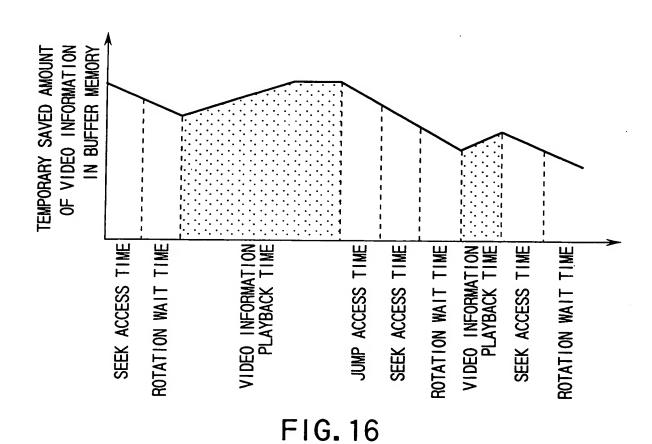


FIG. 15



INVENTOR: Hideo ANDO, et al. **SHEET 12 of 25** 12/25 PETET VIDEO INFORMATION PLAYBACK TIME VIDEO INFORMATION PLAYBACK TIME SESS VIDEO INFORMATION PLAYBACK TIME IN BUFFER MEMORY OF VIDEOINFORMATION TEMPORARY SAVED AMOUNT VIDEO INFORMATION PLAYBACK TIME SEEK ACCESS TIME ROTATION WAIT TIME FIG. 17 OF VIDEOINFORMATION IN BUFFER MEMORY TEMPORARY SAVED AMOUNT SEEK ACCESS TIME VIDEO INFORMATION PLAYBACK TIME SEEK ACCESS TIME VIDEO INFORMATION PLAYBACK TIME ROTATION WAIT TIME JUMP ACCESS TIME JUMP ACCESS TIME ROTATION WAIT TIME FIG. 18

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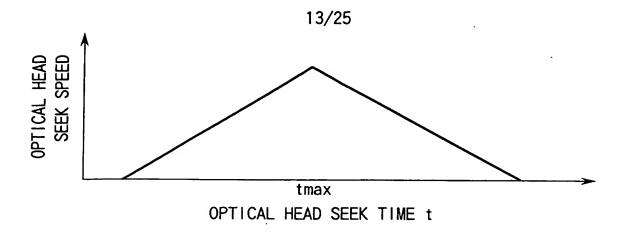


FIG. 19

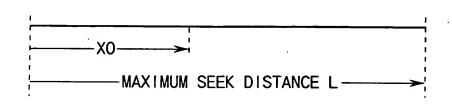


FIG. 20

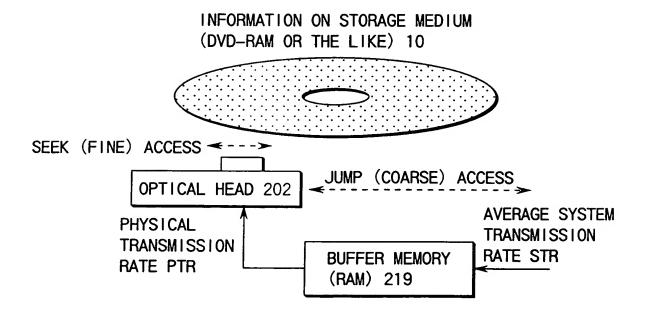


FIG. 21

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FREE AREA 107	С	ELL #	1	CELL #2				CELL #3			
				VOBU VOBU VOBU VOBU 108d 108e 108f 108g							

FIG. 22

FREE AREA 107	CELL #1		#2A						ELL #		
	V0BU 108a	V0BU 108b	V0BU	V0BU 108d	13,71	OBU Q8e	V0BU 108f	V0BU 108g	V0BU 108h	V0BU 108 i	V0BU 108 j

FIG. 23

CELL #2A	CELL #1		CELL	#2B		CELL #3			
VOBU VOBU	V0BU	VOBU	V0BU	VOBU	V0BU	V0BU	V0BU	V0BU	V0BU
108d* 108p	108a	108b	108c*	108q	108f	108g	108h	108 i	108 j

FREE AREA 106

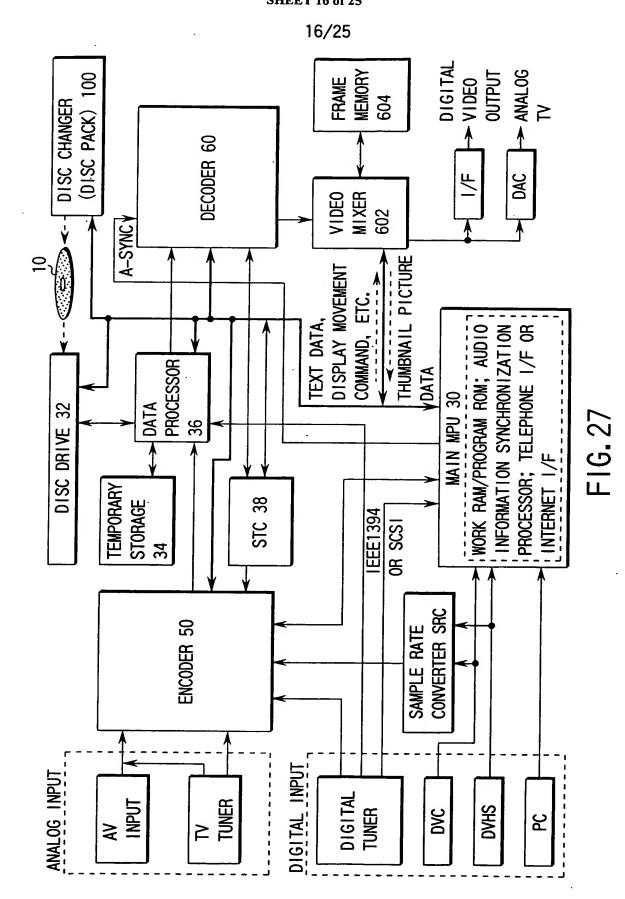
FIG. 24

DOCKET NO: 249731US2S DIV VENTOR: Hideo ANDO, et al. SHEET 15 of 25 15/25 VIDEO INFORMATION PLAYBACK TIME VIDEO INFORMATION PLAYBACK TIME VIDEO INFORMATION PLAYBACK TIME IN BUFFER MEMORY OF VIDEOINFORMATION TEMPORARY SAVED AMOUNT SEEK ACCESS TIME VIDEO INFORMATION RECORDING TIME ROTATION WAIT TIME SEEK ACCESS TIME SEEK ACCESS TIME ROTATION WAIT TIME ROTATION WAIT TIME SEEK ACCESS TIME ROTATION WAIT TIME FIG. 25 OF VIDEOINFORMATION IN BUFFER MEMORY TEMPORARY SAVED AMOUNT SEEK ACCESS TIME JUMP ACCESS TIME SEEK ACCESS TIME VIDEO INFORMATION RECORDING TIME VIDEO INFORMATION RECORDING TIME ROTATION WAIT TIME JUMP ACCESS TIME ROTATION WAIT TIME

FIG. 26

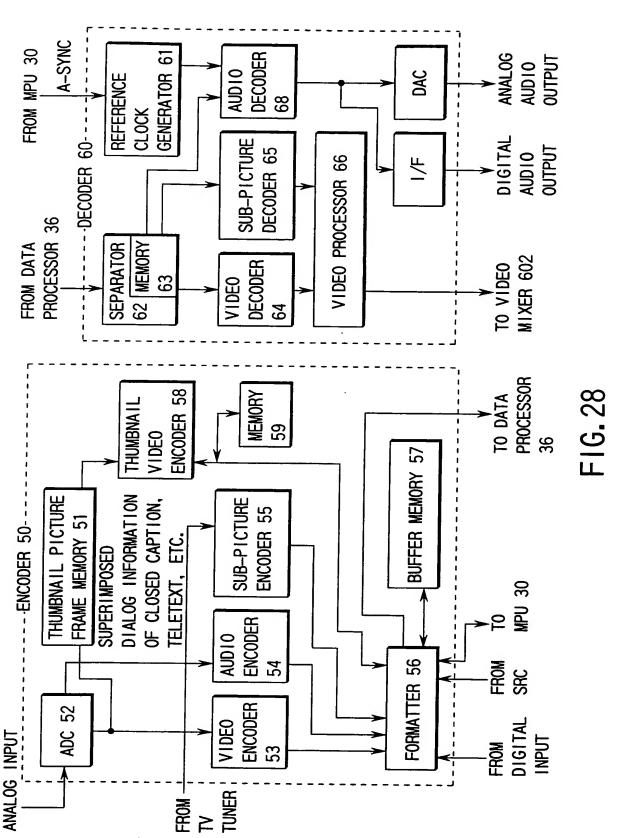
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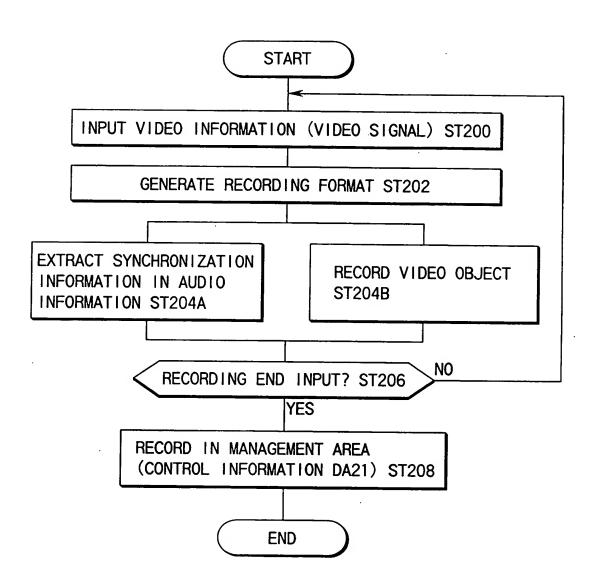
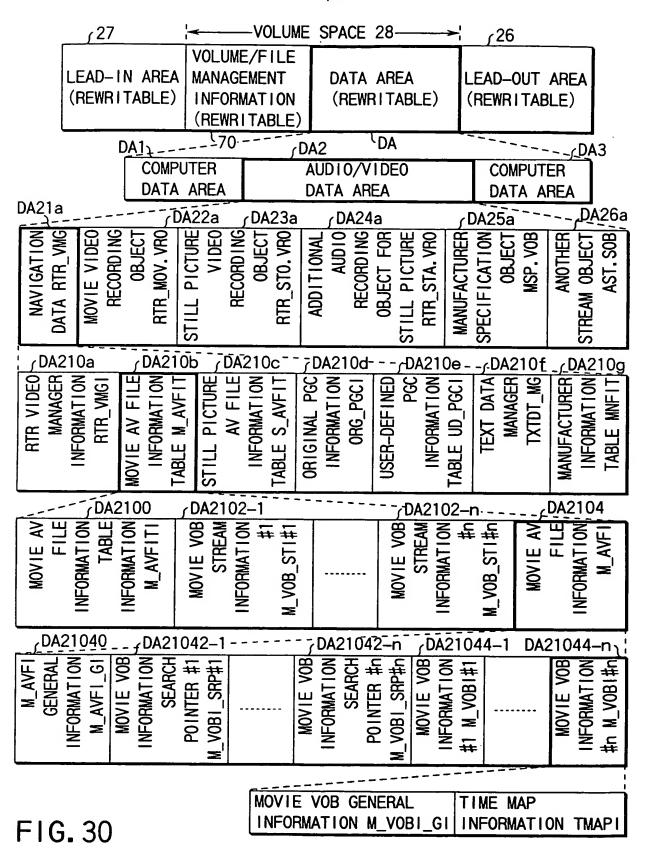


FIG. 29

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											. ==			
TIME MAP GENERAL		TIME ENTRY	/ #1		TIME VOBU ENTRY #r ENTRY #1				ı	OBU NTRY #	· a			
INFORMAT	JAMATTUN TM ENTH1 TM ENTH- VODU ENTH1								OBU_EN					
VOBU ENTRY #1 VOBU ENTRY #q														
VOBU#1	- 1	'OBU#1		VOBU‡	1		1		3U#q		U#q		VOBU	-
1STREF _SZ		OBU_P .TM	ı	VOBU _SZ			1	1S _SZ	TREF Z	VOB	U_PE	3	VOBU _SZ	
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3 OF JRES # 1	* 0F	五 五 五 五		음 #			 유		URE	#	100	ט נו	유 변2	
NUMBER OF PICTURES IF VOBU #1	MBE 5	F VOBU #2		S1ZE VOBU	ļ		SIZE		1316	V0BU#1	5	2 5	SIZE OF VOBU#2	
0					<u> </u>			4	<u> </u>] -	<u> </u>		
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ALLOC				C CON					TIME		ROL			
MAP T	ARLE	<u> </u>	IN	FORMA	TIO	N	INF	OF	RMATIO	N				
CORRESPO	CORRESPONDING TO AV DATA CONTROL INFORMATION DA210													

FIG. 31

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TIME MAP GENERAL INFORMATION TMAP_GI

RELATIVE BYTE POSITION	FIELD NAME	CONTENTS	NUMBER OF BYTES
0-1	TM_FNT_Ns	NUMBER OF TIME ENTRIES	2
2–3	VOBU_ENT_Ns	NUMBER OF VOBU ENTRIES	2
4–5	TM_OFS	TIME OFFSET	2
6–9	ADR_OFS	ADDRESS OFFSET	4

FIG. 32

TIME ENTRY TM_ENT

RELATIVE BYTE POSITION	FIELD NAME	CONTENTS	NUMBER OF BYTES
0–1	VOBU_ENTN	VOBU ENTRY NUMBER	2
2	TM_DIFF	TIME DIFFERENCE	1
3–6	VOBU_ADR	TARGET VOBU ADDRESS	4

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										Z/ Z:		•							
—	DATA AREA (REWRITABLE) DA															>			
RTR MOB.VRO DA22a-1				1	COMPUTER DATA FILE				RTR MOB.VRO DA22a-2				RTR STO. VRO DA23a-1			RTR MOB. VRO DA22a-3			
EXTENT /SET #A					EXTENT /SET #B				EXTENT /SET #C			EXTENT /SET #D			EXTENT /SET #E				
LBN	1 =	LOG	ICA	L B	L0ÇI	(NU	MBE	Ŕ				-			/				1
V_PCK LBN·a		SP_PCK LBN·a+g	V_PCK LBN·a+g+1		V_PCK LBN·a+b-1	PC_DAT LBN·a+b		V_PCK LBN·c	V_PCK LBN·c+1		V_PCK LBN·c+d-1	V_PCK LBN·c+d		A_PCK LBN·e-1	V_PCK LBN·e		V_PCK LBN·e+h		A_PCK LBN·e+f-1
M · A	M·ADR = MOVIE ADDRESSST·ADR)R =	ŠŤ)) ILL	PIC]`\~ :TUF	: ()	DDRI	ESŞ
V_PCK M·ADR o		M·ADR g	M-ADR g+1		M-ADR b-1	M-ADR b		M-ADR b+h		M-ADR b+f-1	M·ADR b+f	M-ADR b+f+1		M-ADR b+f+d-1			ST-ADR o		ST-ADR e-c-d
V_PC		SP_PCK	V_PCK		V_PCK	V_PCK		V_PCK		A_PCK	V_PCK	V_PCK		V_PCK			V_PCK		A_PCK
														-					
VO	VOBU#1			VOBU#2			VOBU#3			VOBU#4			VOBU#5			VOB			
VIDEO OBJECT VOI							B# α			VOB#			B				ENTRY		
	VOBU_ PB_TM			VOBU_ PB_TM			VOBU_ PB_TM			VOBU_ PB_TM			VOBU_ PB_TM				VOB GROUP		,
	TIME DIFFERENCE TIME ENTRY POINT TM_DIFF																		

FIG. 34

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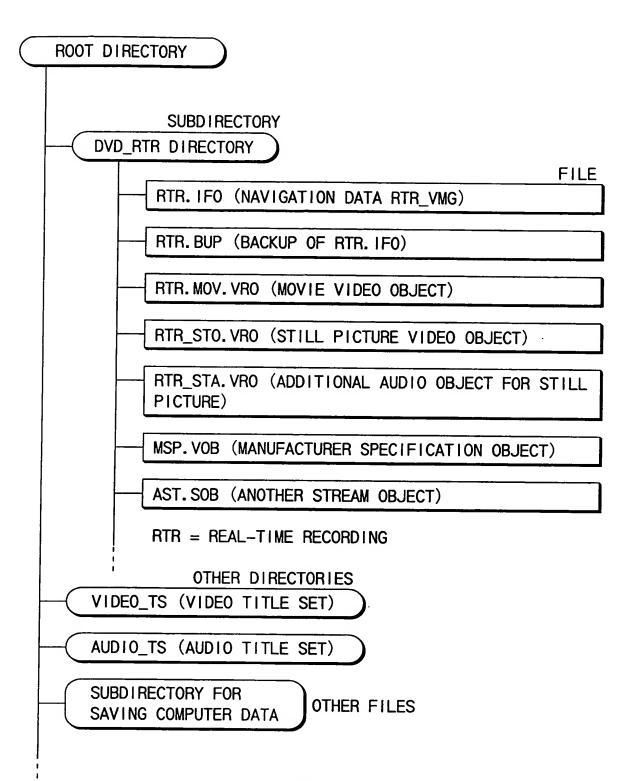


FIG. 35

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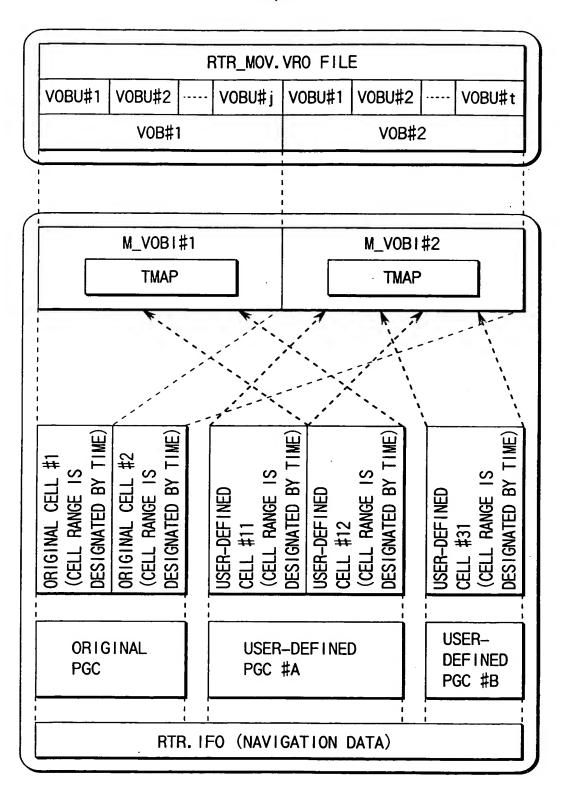


FIG. 36

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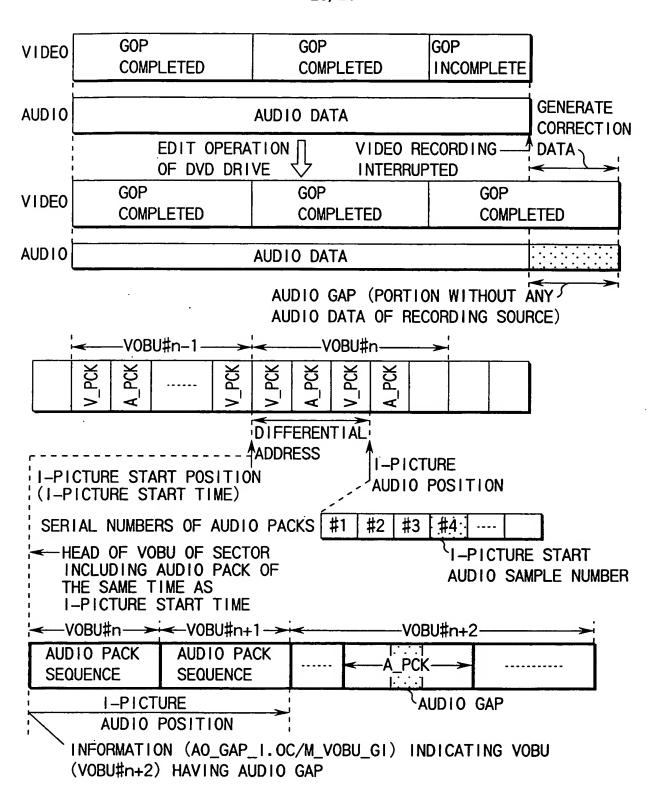


FIG. 37